AFCTN Test Report 94-066

AFCTB-ID 94-041

Technical Raster Transfer

Using:

Grumman Aerospace Corp. Data

Supporting:

SA/ALC-TIRA's F15 DST Program

(Contract #F41608-93-D-0064)

MIL-R-28002A (Raster)

Quick Short Test Report

10 May 1994

Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

Technical Raster Transfer
Using:
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Quick Short Test Report

10 May 1994

Prepared By
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Air Force CALS Test Bed

Notification of Test Results

10 May 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

Grumman Aerospace Corporation

Identified as follows:

Title:	**Technical Raster Transfer**
Program:	**F-15 Downsized Tester (DST)**
Program Office:	**SA/ALC-TIRA**
Contract No.:	**F41608-39-D-0064**
QSTR No.:	**AFCTB-ID 94-041**

Received on the following media: **9-track magnetic tape**

The results of the AFCTB Quick Short Test Report evaluation are as follows:

MIL-STD-1840A Media Format:	**Pass**
MIL-D-28000A IGES:	**N/A**
MIL-M-28001A SGML:	**N/A**
MIL-R-28002A Raster:	**Pass**
MIL-D-28003 CGM:	**N/A**

Formal results with associated disclaimer are documented and available from the AFCTB.

Air Force CALS Test Bed
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Grumman Aerospace's interpretation and use of the CALS standards in transferring technical Raster data. Grumman used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-041

Date of Evaluation: 10 May 1994

Evaluator:
George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:
Joe Migliore
Grumman Aerospace Corporation
M/S A53-143
Sunrise Highway
Great River NY 11739
516 224-8276

Data Description:
Technical Manual Test
1 Document Declaration file
8 Raster files

Data Source System:

1840

HARDWARE
Sun Microsystems SPARC Station IPC Platform
SunOS 4.1.3

SOFTWARE
Interleaf CALSplus v5.1.3

Raster

HARDWARE
Sun Microsystems SPARC Station IPC Platform
SunOS 4.1.3

SOFTWARE
Interleaf CALSplus v5.1.3

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*
XSoft *CAPS/CALS v40.4*

MIL-R-28002 (Raster)

HP 735

InterCAP *X-Change v7.82*

SGI Indigo2

IGES Data Analysis (IDA) *CALSView*

SUN SparcStation 2

Carberry *CADLeaf Plus v3.1*
AFCTN *validg4*
AFCTN *xrastb.sun4*
IDA *IGESView v3.0*

PC 486

AFCTN *validg4*
IDA *IGESView Windows*
Inset Systems *HiJaak Pro*
Expert Graphics *RxHighlight v1.0*

Standards Tested:

MIL-STD-1840A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial overnight bag. The exterior of the bag was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material, as required by MIL-STD-1840A, para. 5.3.1.2. The tape reel was missing a label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. A packing list showing all files recorded on the tape was not enclosed.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.10* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS read1840A* utility without any reported errors.

The physical structure of the tape meets the CALS MIL-STD-1840A and ANSI x3.27 requirements.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included in this evaluation.

6. Raster Analysis

The tape contained eight Raster files. The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

All files were evaluated using the AFCTN *validg4* utility. This program reported all eight files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The Raster files were read into Carberry's *CADLeaf* software and displayed without a reported error.

The files were read using IDA's *CALSView* and displayed without a reported error.

The files were read into IDA's *IGESView* and *IGESView for Windows* and displayed without a reported error.

The files were read into Inset Systems' *HiJaak for Windows* and displayed without a reported error.

The files were read using InterCAP's *X-Change* and displayed without a reported error.

The Raster files were imported into Expert Graphics' *Rx-Highlight* and displayed without a reported error.

The Raster files meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included in this evaluation.

8. Conclusions and Recommendations

The tape from Grumman Aerospace Corporation was correct. The tape could be read properly using the AFCTN *Tapetool* software without any reported errors. The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

The Raster files meet the CALS MIL-R-28002A specification.

The tape and files submitted by Grumman Aerospace Corporation meet the requirements defined in CALS MIL-STD-1840A.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

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MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set070

                                                                    Page: 1
```

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000058	Extracted
D001R002	Raster	F/00128	02048/000059	Extracted
D001R003	Raster	F/00128	02048/000062	Extracted
D001R004	Raster	F/00128	02048/000061	Extracted
D001R005	Raster	F/00128	02048/000024	Extracted
D001R006	Raster	F/00128	02048/000045	Extracted
D001R007	Raster	F/00128	02048/000058	Extracted
D001R008	Raster	F/00128	02048/000027	Extracted

```
Catalog Process terminated normally.
```

9.2 Tape Evaluation Log

```
CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

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ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01                                                              4

  Label Identifier: VOL1
  Volume Identifier: CALS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001              CALS0100010001000100 94125 00000 000000ILEAF VER 1.7

                           <<<<< PART OF LOG FILE REMOVED HERE >>>>>

********** Tape Mark ***************

 ############ End of Volume CALS01 ##############

 ############ End Of Tape File Set ##############

 Deallocating /dev/rmt0...

Tape Import Process terminated normally.
```

9.3 Tape File Set Validation Log

```
CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Tue May 10 12:28:34 1994
MIL-STD-1840A File Set Evaluation Log

File Set: Set070

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: Grumman A&E, Great River, NY
srcdocid: 18248
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19940101
dstsys: EDCARS System, SA-ALC/TIRD, KELLY AFB, TX 78241-5000
dstdocid: 1840A group 4 site
dstrelid: NONE
dtetrn: 19940506
dlvacc: NONE
filcnt: R8
ttlcls: U
doccls: U
doctyp: F15
docttl: Powr Control Unit Electrical Assembly

Found file: D001R001
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: DL18248          26512                 00010001UMBDHN
dstdocid: 1840A group 4 site
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 016000,016000
rdensty: 0600
notes: NONE
```

Saving Raster Header File: D001R001_HDR
Saving Raster Data File: D001R001_GR4

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

Found file: D001R008
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: DL18248 26512 00010001UMBDHN
dstdocid: 1840A group 4 site
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 011987,011987
rdensty: 0600
notes: NONE

Saving Raster Header File: D001R008_HDR
Saving Raster Data File: D001R008_GR4

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

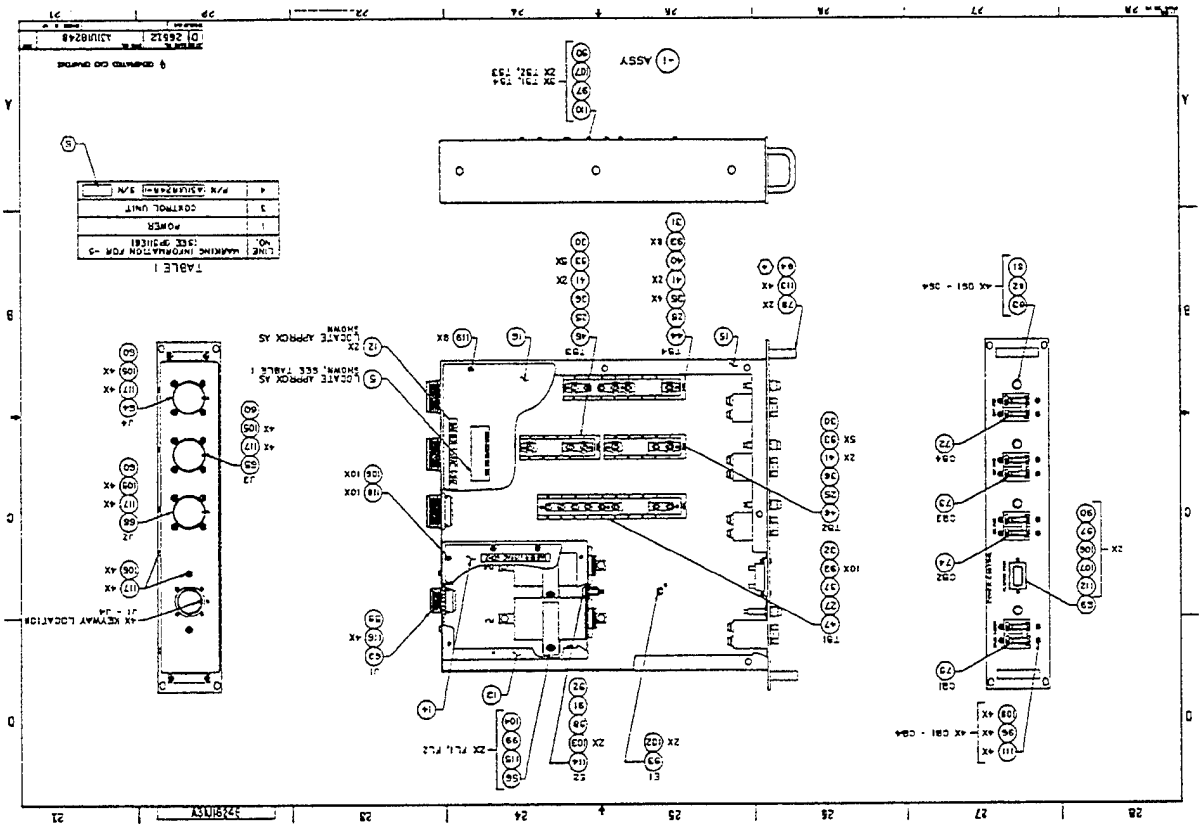
9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001     ' ---
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit1.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit2.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit3.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit4.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit5.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit6.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit7.R.cci'.
/cals/caps/Bin/read1840A: writing data file 'aftb9441/1840Agroup4sit/
1840Agroup4sit8.R.cci'.
-- declaration file indicates 0 files of type T
-- declaration file indicates 0 files of type G
-- declaration file indicates 0 files of type H
-- declaration file indicates 0 files of type Q
-- declaration file indicates 8 files of type R
-- declaration file indicates 0 files of type C
-- declaration file indicates 0 files of type X
-- declaration file indicates 0 files of type P
-- declaration file indicates 0 files of type Z
```

10. Appendix B - Detailed Raster Analysis

10.1.1 File D001R005

10.1.2 Output IGESView



10.1.3 Output RxHighlight